

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 63-176491  
(43)Date of publication of application : 20.07.1988

(51)Int.CI.

C25D 5/02

(21)Application number : 62-005363

(71)Applicant : MATSUSHITA ELECTRIC IND CO LTD

(22)Date of filing : 13.01.1987

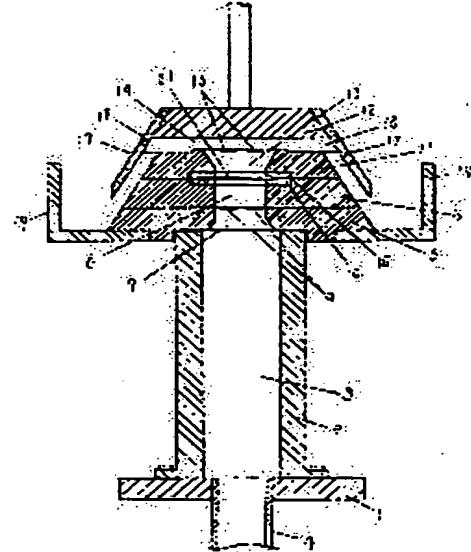
(72)Inventor : TANAKA HISAHIRO  
AKAMATSU AKIRA  
KAWABE TAKAHIRO

## (54) PARTIAL PLATING DEVICE

### (57)Abstract:

**PURPOSE:** To enable fast plating while controlling the oxidative deterioration of a plating soln. by holding a material to be plated between upper and lower cells, passing the plating soln. from the lower cell to the upper cell, and then allowing the soln. to flow into a soln. receiving tank opened at the upper part along the inclined face on the side part of the lower cell.

**CONSTITUTION:** The lead frame 21 for the material to be plated pierced with a through hole at the part to be plated by punching is held together with masks 10 and 16 between the lower cells 5 and 6 fixed to the upper end of the barrel 2 of a plating soln. supply tank 3 and the lower part 11 of the vertically movable upper cell. The plating soln. is circulated through the plating soln. passages 7, 8 and 13 connecting with the lower and upper parts 5 and 6 of the lower cell and the lower part 11 of the upper cell from a supply pipe 4 through the supply tank 3. At the same time, the lead frame 21 is used as a cathode, an electric current is applied between the cathode and the anodes 9 and 15, and partial plating is carried out. The plating soln. overflows into the overflow groove 14 between the lower part 11 and the upper part 12 of the upper cell, then flows down smoothly on the inclined faces of the outer walls of the upper and lower parts 6 and 5 of the lower cell via an outflow port 18, flows into a pan 19 of the soln. receiving tank, and is further sent to a main tank (not shown in the figure).



### LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

Applicants: Won-Chan Park and Chul-Min Kim  
U.S. Serial No.: Not Yet Known (national stage of PCT International Application No. PCT/KR2004/000586)  
Filed: Herewith  
Exhibit 3

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision  
of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office